## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property **Organization** International Bureau



# 

(43) International Publication Date 21 July 2005 (21.07.2005)

**PCT** 

# (10) International Publication Number WO 2005/065814 A1

(51) International Patent Classification<sup>7</sup>: C12Q 1/68

B01J 19/00,

Limited, Chesterford Research Park, Little Chesterford, Saffron Walden, Essex CB10 1XL (GB).

(21) International Application Number:

PCT/GB2005/000033

(22) International Filing Date: 7 January 2005 (07.01.2005)

(25) Filing Language:

English

(26) Publication Language:

**English** 

(30) Priority Data:

0400253.1 04254726.5 7 January 2004 (07.01.2004) GB

EP 5 August 2004 (05.08.2004)

(71) Applicant (for all designated States except US): SOLEXA LIMITED [GB/GB]; Chesterford Research Park, Little Chesterford, Saffron Walden, Essex CB10 1XL (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SMITH, Mark, Edward, Brennan [GB/GB]; Solexa Limited, Chesterford Research Limited, Little Chesterford, Saffron Walden, Essex CB10 1XL (GB). SABOT, Andrea [IT/GB]; Solexa Limited, Chesterford Research Park, Little Chesterford, Saffron Walden, Essex CB10 1XL (GB). RASALONJA-TOVO, Isabelle, Marie, Julia [FR/GB]; Solexa Limited, Chesterford Research Park, Little Chesterford, Saffron Walden, Essex CB10 1XL (GB). SOHNA SOHNA, Jean-Ernest [CM/GB]; Solexa Limited, Chesterford Research Park, Little Chesterford, Saffron Walden, Essex CB10 1XL (GB). HORGAN, Adrian, Martin [GB/GB]; Solexa Limited, Chesterford Research Park, Little Chesterford, Saffron Walden, Essex CB10 1XL (GB). SWERDLOW, Harold, Philip [US/GB]; Solexa

- (74) Agents: WHITE, Nina, Louise et al.; Boult Wade Tennant, Verulam Gardens, 70 Gray's Inn Road, London WC1X 8BT (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

### **Declaration under Rule 4.17:**

of inventorship (Rule 4.17(iv)) for US only

#### Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MODIFIED MOLECULAR ARRAYS

(57) Abstract: The invention relates to the preparation of a hydrogel surface useful in the formation and manipulation of arrays of molecules, particularly polynucleotides and to the chemical modification of these and other arrays. In particular, the invention relates to a method of preparing a hydrogel immobilised to a solid support comprising polymerising on the support a mixture of a first comonomer which is acrylamide, methacrylamide, hydroxyethyl methacrylate or N-vinyl pyrrolidinone and a second comonomer which is a functionalised acrylamide or acrylate.

